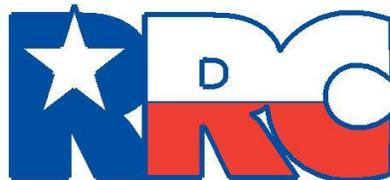


# **TEXAS LP-GAS EXAMINATION STUDY GUIDE**

**Categories F, G, I & J**

Cylinder Filling Facility Operator  
Motor & Mobile Fuel Dispensing Station Operator  
**Management Level**



**RAILROAD COMMISSION OF TEXAS**

February 2018

## **NOTICE**

This publication is intended for use in its entirety as a guide for persons preparing to take a Railroad Commission LP-gas qualifying examination. Any other use or distribution of this publication or use or distribution of any portion of this publication for any purpose whatsoever is considered by the Railroad Commission of Texas to be misuse of this publication.

This publication is not intended to be an exhaustive treatment of the subjects covered and should not be interpreted as precluding the use of other safety programs or procedures that comply with (1) applicable federal, state, and/or local code provisions, statutes, ordinances, and/or other regulations, including, but not limited to, the Railroad Commission of Texas' LP-Gas Safety Rules and codes adopted by the Railroad Commission of Texas, and/or (2) other industry standards and/or practices.

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## **Exam administration**

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### **Taking an examination in Austin**

You may take any Railroad Commission qualifying examination in Austin without pre-registering (“walk-in”) on any business day, excluding holidays, from 8:00 a.m. to 12:00 noon at the Commission’s Alternative Fuels Training Center. The training center is located at 6506 Bolm Road, on the northwest corner of the intersection of Bolm Road and U.S. Highway 183. Please note that with some examinations such as the Category F, G, I and J management level exams, completion of the required training course is a prerequisite.

(See map to Training Center on page 35)

### **Taking an examination outside of Austin**

You may also take any Railroad Commission qualifying examination at several locations statewide, if prerequisite training has been completed. Exam dates, times and locations are listed three months in advance on the Commission’s web site. To view a complete schedule, go to [www.rrc.texas.gov](http://www.rrc.texas.gov) From the drop-down menu under “Alternative Fuels” choose “Safety, Licensing, Training & Certification” and click on “Training and Exam Events.” The online schedule has links to maps showing each class and exam location.

You must register at least two business days in advance to take an examination outside of Austin. To register online, go to [www.rrc.texas.gov](http://www.rrc.texas.gov) From the drop-down menu under “Alternative Fuels” choose “Safety, Licensing, Training & Certification”, under Liquefied Petroleum Gas click on “Training, Requirements, Classes and Exams” then find and click on “Register Now.” The web site allows you to register up to four people for an examination.

When you register online, you will receive a return e-mail within two business days confirming the registration and the dates and locations of the exams. Registering online also ensures that you will receive advance notification of any changes in the examination date, time or location.

### **Payment for exams; LPG Form 16; ID required**

The fee is \$40.00 for each employee-level exam and \$70.00 for each management-level exam. Fees are non-refundable by state law, and cash cannot be accepted.

You may pay the required examination fee at any exam location by check or money order payable to the Railroad Commission of Texas. LPG Form 16, “Application for Examination,” may also be completed at the examination site. Examinees must also present an official state-issued driver’s license or photo ID at the exam site.

You may also pay your examination fee by credit card in advance online. To pay by credit card, go to [www.rrc.texas.gov](http://www.rrc.texas.gov) To pay online, be sure to print out the confirmation page. Make a copy of the confirmation page for your records and bring a copy with you to the examination site.

### **Closed-book examinations**

All Railroad Commission management-level qualifying examinations are closed book. This study guide may not be used during any employee or management-level examination.

Examinees should prepare for the Category F Cylinder Filling Facility Operator, Category G Motor & Mobile Fuel Dispensing Station Operator, Category I ASME Service Station and Cylinder Filling Operator or Category J Service Station & Cylinder filling Transporter management-level examinations by studying the applicable sections of the Railroad Commission’s LP-Gas Safety Rules (16 *Texas Administrative Code*, Chapter 9) and National Fire Protection Association (NFPA) 58, *Liquefied Petroleum Gas Code* (2008 ed.).

### **Examination time limit**

Categories F, G, I or J management-level qualifying examinations must be completed within two hours after the examination is given to you, including any breaks you elect to take. The examination proctor is the official timekeeper. You must submit both the examination itself and your answer sheet to the proctor within the two-hour limit.

### **Grades, reports and retakes**

The minimum passing grade is 75 percent on all Railroad Commission qualifying examinations.

Examinations administered at the Training Center in Austin are graded on-site, and examinees are immediately informed of the results. If you fail an examination that you took in Austin, you may retake that same examination only one additional time during a business day. Any subsequent examination must be taken on another business day, unless approved by the Commission.

Exams taken outside of Austin are graded as soon as possible, and the results of the examination are reported within 10 working days.

If you pass an examination, the Railroad Commission will issue you a blue certification card within 10 working days. You will be notified by phone, e-mail and/or letter if you fail an examination.

### **Required first-year training class**

Applicants for a Category F, G, I or J management-level certification shall attend the 16-hour class prior to taking the exam and pass it before the Commission issues the certification.

### **Contacts**

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#### **Alternative Fuels Safety**

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# LP-GAS EXAMINATION STUDY GUIDE

## MANAGEMENT-LEVEL

### Categories F, G, I & J

#### Who should use this guide?

You should use this guide to prepare for the Railroad Commission's management-level qualifying examination to apply for any of the following:

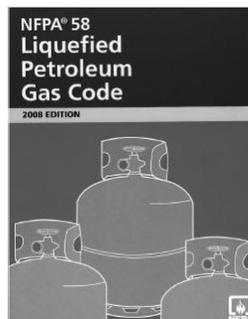
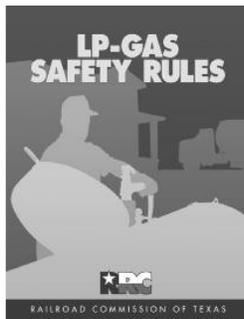
Category F (Cylinder Filling Facility Operator) license which authorizes the operation of a cylinder filling facility, including cylinder filling, the sale of LP-gas in cylinders, and the replacement of cylinder valves.

Category G (Motor & Mobile Fuel Dispensing Station Operator) which license authorizes the operation of LP-gas dispensing stations filling ASME containers designed for motor or mobile fuel.

Category I (ASME Service Station and Cylinder Filling Operator) license which authorizes any service stations and cylinder activity set out in Category F and Category G of this section.

Category J (Service Station & Cylinder filling Transporter) facilities which authorizes the operation of a cylinder filling facility, including cylinder filling and the sale, transportation, installation, and connection of LP-gas in cylinders, the replacement of cylinder valves, and the operation of an LP-gas service station as set out in Category G.

#### What books do I need?



This examination tests your knowledge of the laws and standards that apply to LP-gas general installation and service activities in Texas. These laws and standards are found in two books:

*LP-Gas Safety Rules* (Texas Railroad Commission)  
*NFPA 58 Liquefied Petroleum Gas Code* (National Fire Protection Association, 2008)

#### Where do I get these books?

You may download the current edition of the Railroad Commission's *LP-Gas Safety Rules* in PDF format free online at [www.rrc.texas.gov](http://www.rrc.texas.gov). A printed copy of this book may be purchased for \$10.00, tax included, by calling the Railroad Commission's publications office at (512) 463-7309.

Printed copies of NFPA 54 and NFPA 58 are available for purchase from the Texas Propane Gas Association by calling (800) 392-0023. You may also order NFPA manuals online at [www.nfpa.org](http://www.nfpa.org); click on "Codes and Standards."

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## Sections and Topics

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Before you take this examination you should know the definitions found in this study guide and the contents of the sections of the codes and standards listed below. The actual examination questions may not cover all of the listed sections and topics.

### **Railroad Commission *LP-Gas Safety Rules***

§9.2	Definitions
§9.6	Licenses and Fees
§9.7	Application for License and License Renewal Requirements
§9.8	Application for a New Certificate
§9.9	Requirements for Certificate Renewal
§9.10	Rules Examination
§9.12	Trainees
§9.17	Designation and Responsibilities of Company Representatives and Supervisors
§9.35	Written Procedures for Gas Leaks
§9.36	Report of LP-Gas Incident/Accident
§9.52	Training and Continuing Education Courses
§9.101	Filings Required for Stationary LP-Gas Installations
§9.109	Physical Inspection of LP-Gas Installations
§9.126	Appurtenances and Equipment
§9.129	Manufacturer's Nameplate and Markings on ASME Containers
§9.134	Connecting Container to Piping
§9.135	Unsafe, or Unapproved Containers, Cylinders or Piping
§9.136	Filling of DOT Cylinders
§9.137	Inspection of Containers at Each Filling
§9.140	Uniform Protection Standards
§9.141	Uniform Safety Standards
§9.202	Registration and Transfer of LP-Gas Transports or Container Delivery Units
§9.403	Sections in NFPA 58 Not Adopted by Reference

## **Sections and Topics**

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### **NFPA 58 (2008)**

§3.3	General Definitions
§4.4	Qualification of Personnel
§5.2	Containers
§5.7	Overfill Prevention Devices
§5.9	Hoses
§6.3	Installation of Containers
§6.13	Hydrostatic Relief Valve Installation
§6.23	LP-Gas Systems on Vehicles
§6.24	Vehicle Fuel Dispenser and Dispensing Stations
§6.25	Fire Protection
§7.2	Operational Safety
§8.2	Storage of Cylinders
§8.4	Storage Outside of Buildings
§9.3	Transportation in Portable Cylinders
§9.7	Parking and Garaging Vehicles
§11.3	Engine Fuel System Containers
§11.7	Installation of Containers
§11.8	Installation in the Interior of Vehicles
§11.12	Industrial Trucks

## Terms and Definitions

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NOTE: The list below is not exhaustive. You are responsible for knowing all the terms and definitions that apply to the LP-gas activities you will perform, as well as the rules and standards highlighted in this guide.

NOTE: Informal terms that are sometimes used in the propane industry instead of formal technical terms are given in brackets.

### **Railroad Commission LP-Gas Safety Rules**

*Alternative Fuel Safety (AFS)*. The RRC department responsible for LP-Gas training and inspection.

*Advanced field training (AFT)*. The final portion of the training or continuing education requirements in which an individual shall successfully perform the specified LP-gas activities in order to demonstrate proficiency in those activities.

*LP-Gas Safety Rules, §9.2(1)*

*Certified*. Authorized to perform LP-gas work as set forth in the Texas Natural Resource Code. Employee certification alone does not allow an individual to perform those activities which require licensing.

*LP-Gas Safety Rules §9.2(11)*

*Company Representative*. The individual designated to the Commission by a license applicant or a licensee as the principal individual in authority and, in the case of a licensee other than a Category P licensee, actively supervising the conduct of the licensee's LP-gas activities.

*LP-Gas Safety Rules, §9.2(15)*

*Licensed*. Authorized to perform LP-gas activities through the issuance of a valid license.

*LP-Gas Safety Rules §9.2(23)*

*Licensee*. A person which has applied for and been granted an LP-gas license by the Commission, or who holds a master or journeyman plumber license from the Texas Board of Plumbing Examiners or a Class A or B Air Conditioning and Refrigeration Contractors License from the Texas Department of Licensing and Regulation and has properly registered with the Commission.

*LP-Gas Safety Rules §9.2(24)*

*Mobile fuel container*. An LP-gas container mounted on a vehicle to store LP-gas as the fuel supply to an auxiliary engine other than the engine to propel the vehicle or for other uses on the vehicle.

*LP-Gas Safety Rules, §9.2(29)*

*Mobile fuel system*. An LP-gas system, excluding the container, to supply LP-gas as a fuel to an auxiliary engine other than the engine to propel the vehicle or for other uses on the vehicle.

*LP-Gas Safety Rules, §9.2(30)*

*Motor fuel container* . An LP-gas container mounted on a vehicle to store LP-gas as the fuel supply to an engine used to propel the vehicle.

*LP-Gas Safety Rules, §9.2(31)*

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## Terms and Definitions

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**Operations Supervisor.** The individual who is certified by the Commission to actively supervise a licensee's AFS and is authorized by the licensee to implement operational changes.

**LP-Gas Safety Rules, §9.2(36)**

**Outlet.** A site operated by an LP-gas licensee from which any regulated LP-gas activity is performed.

**LP-Gas Safety Rules, §9.2(37)**

**Portable cylinder.** A receptacle constructed to DOT specifications, designed to be moved readily, and used for the storage of LP-gas for connection to an appliance or an LP-gas system. The term does not include a cylinder designed for use on a forklift or similar equipment.

**LP-Gas Safety Rules, §9.2(40)**

**Rules examination.** The Commission's written examination that measures an examinee's working knowledge of Chapter 113 of the Texas Natural Resources Code and/or the current LP-Gas Safety Rules.

**LP-Gas Safety Rules, §9.2(46)**

**Trainee.** An individual who has not yet taken and passed an employee-level rules examination.

**LP-Gas Safety Rules, §9.2(53)**

### **NFPA 58 (2008)**

**ASME.** American Society of Mechanical Engineers.

**NFPA 58, §3.3.6**

**Container.** Any vessel, including cylinders, tanks, portable tanks, and cargo tanks, used to transport or store LP-gases.

**NFPA 58, §3.3.13**

**Container appurtenances.** Devices installed in container openings for safety, control, or operating purposes.

**NFPA 58, §3.3.14**

**DOT.** U.S. Department of Transportation.

**NFPA 58, §3.3.21**

**Volumetric Method Filling.** Filling a container to not more than the maximum permitted liquid volume.

**NFPA 58, §3.3.22.1**

**Weight Method Filling.** Filling containers to not more than the maximum permitted filling limit by weighing the LP-Gas in the container.

**NFPA 58, §3.3.22.2**

**Liquefied Petroleum Gas (LP-Gas).** Any material having a vapor pressure not exceeding that allowed for commercial propane that is composed predominantly of the following hydrocarbons, either by themselves or as mixtures: propane, propylene, butane (normal butane or isobutane), and butylenes.

**NFPA 58, §3.3.36**

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## Terms and Definitions

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**Mobile Container.** A container that is permanently mounted on a vehicle and connected for uses other than supplying engine fuel.

**NFPA 58, §3.3.41**

**NFPA.** National Fire Protection Association.

**NFPA 58, §3.3.47**

**Portable Container.** A container designed to be moved readily, as opposed to a container designed for stationary installations.

**NFPA 58, §3.3.55**

**Universal Cylinder.** A cylinder that can be connected for service in either the vertical or the horizontal position, so that the fixed maximum liquid level gauge, pressure relief device, and withdrawal appurtenances function properly in either position.

**NFPA 58 §3.3.73**

### Sample Question

A cylinder that can be used in either the vertical or horizontal position, and whose fixed maximum liquid level gauge, pressure relief valve and withdrawal appurtenances will work properly in either position is called a \_\_\_\_\_ cylinder.

- A. Combination
- B. Dual-Purpose
- C. Universal
- D. VP or HP

*Answer: C*

## Key Topics

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NOTE: The list below is not exhaustive. You are responsible for knowing all the facts, rules, standards and procedures that apply to the LP-gas activities you will perform, as well as the rules and standards highlighted in this guide.

As you study the applicable codes and standards, pay special attention to the facts, rules and procedures related to the following key topics. When you take the examination, read each question very carefully.

### Licenses and Fees

A Category F license for cylinder filling authorizes the operation of a cylinder filling facility, including cylinder filling, the sale of LP-gas in cylinders, and the replacement of cylinder valves. The original license fee is \$100; the renewal fee is \$50.

***LP-Gas Safety Rules, §9.6(c)(6)***

A Category G license for dispensing stations authorizes the operation of LP-gas dispensing stations filling ASME containers designed for motor or mobile fuel. The original license fee is \$100; the renewal fee is \$50.

***LP-Gas Safety Rules, §9.6(c)(7)***

A Category I license for service stations and cylinder filling authorizes any service stations and cylinder activity set out in Category F and Category G of this section. The original license fee is \$150; the renewal fee is \$70.

***LP-Gas Safety Rules, §9.6(c)(9)***

A Category J license for service stations and cylinder facilities authorizes the operation of a cylinder filling facility, including cylinder filling and the sale, transportation, installation, and connection of LP-gas in cylinders, the replacement of cylinder valves, and the operation of an LP-gas service station as set out in Category G. The original license fee is \$1000; the renewal fee is \$300.

***LP-Gas Safety Rules, §9.6(c)(10)***

## **Filings Required for Stationary LP-Gas Installations**

Within 30 days following the completion of a container installation with an aggregate water capacity of less than 10,000 gallons, the licensee must submit LPG Form 501 and the required nonrefundable fee to AFS. Installations covered by this requirement include retail LP-gas cylinder exchange storage racks, forklift cylinder exchange racks, and forklift cylinder exchange installations.

For installations with an aggregate water capacity of 10,000 gallons or more, the licensee shall submit LPG Form 500 to AFS at least 30 days prior to construction along with a plat drawing, site plan and driveway design if the facility is accessed from a public highway.

When maintenance and improvements are being made to the piping system at an existing LP-gas installation with a capacity of 10,000 gallons or more, the applicant or operator need not submit LPG Form 500, LPG Form 500A, or a site plan before installing a bulkhead, swivel-type piping, breakaway devices, pneumatically operated internal valves, or emergency shutoff valves.

*LP-Gas Safety Rules, §9.101(b), (c) and (d)*

## **Physical Inspection of Stationary LP-Gas Installations**

Aggregate water capacity of 10,000 gallons or more. The applicant shall notify AFS in writing when the installation is ready for inspection. If AFS does not physically inspect the facility within 30 calendar days of receipt of notice that the facility is ready for inspection, the facility may operate conditionally until the initial complete inspection is made.

If any safety rule violations exist at the time of AFS's initial inspection, the installation may be required to cease LP-gas operations until the violations are corrected.

*LP-Gas Safety Rules, §9.109 (a)*

Aggregate water capacity of less than 10,000 gallons. After receipt of LPG Form 501, AFS shall conduct an inspection as soon as possible to verify that the installation described is in compliance with the LP-Gas Safety Rules. The facility may be operated prior to inspection if it is in compliance with the LP-Gas Safety Rules.

If any LP-gas statute or safety rule violation exists at the time of the first inspection at a commercial installation, the subject container, including any piping, appliances, appurtenances, or equipment connected to it may be immediately removed from LP-gas service until the violations are corrected.

*LP-Gas Safety Rules, §9.109 (b)*

## **Containers**

Unless specifically prohibited for use by another section of the LP-Gas Safety Rules, all appurtenances and equipment placed into LP-gas service must be listed by a nationally recognized testing laboratory such as Underwriters Laboratory (UL), Factory Mutual (FM), or the American Gas Association (AGA).

*LP-Gas Safety Rules, §9.126(a)*

## Nameplates

LP-gas must not be introduced into an ASME container unless the container is equipped with an original nameplate or at least one of the following nameplates: Commission Identification Nameplate, Duplicate, Modification (or alteration), and Replacement, permanently attached to the container.

***LP-Gas Safety Rules, §9.129(a)(1) - (4)***

Nameplates on containers built prior to September 1, 1984, must include at least:

- (1) the name of container manufacturer,
- (2) the manufacturer's serial number,
- (3) the container's working pressure and
- (4) the container's water capacity.

***LP-Gas Safety Rules, §9.129(d)***

Nameplates on containers built on or after September 1, 1984, shall be stainless steel and permanently attached to the container by continuous fusion welding around the perimeter of the nameplate, and shall be stamped or etched with the following information in characters at least 5/32 inch high:

- (1) service for which the container is designed (underground, aboveground, or both);
- (2) name and address of container supplier or trade name of container;
- (3) water capacity of container in pounds or U.S. gallons;
- (4) design pressure in pounds per square inch;
- (5) the wording "This container shall not contain a product that has a vapor pressure in excess of \_\_\_\_\_ psi at 100 degrees F";
- (6) outside surface area in square feet;
- (7) year of manufacture;
- (8) shell thickness and head thickness;
- (9) overall length of the container, the outside diameter of the container, and dish radius of the heads;
- (10) manufacturer's serial number;
- (11) ASME Code symbol;
- (12) minimum design metal temperature \_\_\_\_\_ F degrees at MAWP \_\_\_\_\_ psi;
- (13) type of construction "W"; and
- (14) degree of radiography "RT-\_\_\_\_\_".

***LP-Gas Safety Rules, §9.129(e)(1) - (14)***

Nameplates on LP-gas motor or mobile fuel tanks shall be permanently attached in a manner which will minimize corrosion of the nameplate or its fastening means and not contribute to corrosion of the container. If the nameplate is not continuously welded to the container, then it shall be raised at least 1/4 inch but no more than 1/2 inch from the container's surface.

***LP-Gas Safety Rules, §9.129(g)***

## **Piping and Tubing**

LP-gas piping must be installed only by a licensee authorized to perform such installation, a registrant authorized by §9.13 of this title (relating to General Installers and Repairman Exemption), or an individual exempted from licensing as authorized by Texas Natural Resources Code, §113.081.

A licensee must not connect an LP-gas container or cylinder to a piping installation made by a person who is not licensed to make such installation, except that connection may be made to piping installed by an individual on that individual's single family residential home.

A licensee may connect to piping installed by an unlicensed person provided the licensee has performed a pressure test, verified that the piping has been installed according to the LP-Gas Safety Rules and filed a properly-completed LPG Form 22 with AFS, identifying the unlicensed person who installed the LP-gas piping.

*LP-Gas Safety Rules, §9.134*

## **Unsafe or Unapproved Containers, Cylinders, or Piping**

A licensee or the licensee's employees shall not introduce LP-gas into any container or cylinder if the licensee or employee has knowledge or reason to believe that such container, cylinder, piping, or the system or the appliance to which it is attached is unsafe or is not installed in accordance with the statutes or the LP-Gas Safety Rules.

*LP-Gas Safety Rules, §9.135*

## **Inspection of Container at Each Filling**

In addition to NFPA 58, §§5.2.1.1, 7.2.2.11, and 5.2.2, before filling a container or cylinder, the individual filling the container or cylinder must examine it for any obvious defects. Where the container or cylinder is found to be dented or bulged, where the metal is gouged, or where there is evidence of corrosion which substantially reduces the integrity of the container or cylinder, the container or cylinder must not be filled.

*LP-Gas Safety Rules, §9.137*

## Filling of DOT Containers

(a) In addition to NFPA 58, §7.4.2.1, DOT containers of less than 101 pounds LP-gas capacity, other than containers designed to be used on forklift or industrial trucks, must be filled by weight only. The weight of the containers must be determined by scales that meet the specifications of the National Institute of Standards and Technology's Handbook 44. Scales at licensees' facilities must be currently registered with the Texas Department of Agriculture. The scales must have a rated weighing capacity which exceeds the total weight of the cylinders being filled. The scales must be accurate during the filling of the cylinder.

The formula for filling LP-gas containers by weight under this section is as follows:

(1) The propane capacity in pounds is determined by multiplying the total water capacity in pounds by 0.42.

(2) Add the tare weight [weight of empty cylinder, plus weight of all permanently attached valves and other fittings] of the cylinder to the liquid weight of the product plus the weight of the hose and nozzle.

The total weight of these three is the proper scale setting.

*LP-Gas Safety Rules, §9.136*

## Uniform Protection Requirements

Fencing material around LP-gas transfer systems and storage containers must be chain link with wire at least 12 1/2 American wire gauge in size, or industrial-type fencing, or material providing equivalent protection as determined by AFS. Fencing shall be at least six feet in height at all points.

*LP-Gas Safety Rules, §9.140(b)(1) - (2)*

Clearance of at least three feet shall be maintained between the fencing and the container and the entire transfer system.

*LP-Gas Safety Rules, §9.140(b)(5)*

Clearance of at least three feet shall be maintained between the railing and any part of an LP-gas transfer system or container or clearance of two feet for retail cylinder filling or service station installations. The two posts at the ends of any railing which protects a bulkhead shall be located a minimum of 24 and a maximum of 36 inches at 45-degree angles to the nearest corner of the bulkhead.

*LP-Gas Safety Rules, §9.140(d)(5)*

In addition to NFPA 58 §5.2.8.1, LP-gas installations shall comply with the sign and lettering requirements specified in Table 1 of this section. An asterisk indicates that the requirement applies to the equipment or location listed in that column.

*LP-Gas Safety Rules, §9.140(g)*

Storage racks used to store nominal 20-pound DOT portable or any size forklift containers shall be protected against vehicular damage by:

- (1) meeting the guardrail requirements of subsection (d) of this section; or
- (2) installing guard posts, provided:

(A) effective February 1, 2008, for new installations, the guard posts are installed a minimum of 18 inches from each storage rack and consist of at least three-inch schedule 40 steel pipe, capped on top or otherwise protected to prevent the entrance of water or debris into the guard post, no more than four feet apart, and anchored in concrete at least 30 inches below ground and rising at least 30 inches above the ground; or

(B) effective February 1, 2008, for new installations, the guard posts are installed a minimum of 18 inches from each storage rack and are constructed of at least four-inch schedule 40 steel pipe capped on top or otherwise protected to prevent the entrance of water or debris into the guard post, and attached by welding to a minimum 8-inch by 8-inch steel plate at least ½ inch thick. The guard posts and steel plate shall be permanently installed and securely anchored to a concrete driveway or concrete parking area.

- (3) Guardrail or guard posts are not required to be installed if:

(A) the cylinder storage rack is located a minimum of 48 inches behind a concrete curb or concrete wheel stop that is a minimum of five inches in height above the grade of the driveway or parking area;

(B) if the requirements of subparagraph (A) cannot be met, the cylinder storage rack must be installed a minimum of 48 inches behind a concrete curb or concrete wheel stop that is a minimum of four inches in height above the grade of the driveway or parking area, and a concrete wheel stop at least four inches in height must be installed at least 12 inches from the curb or first wheel stop;

- (4) All parking wheel stops and cylinder storage racks in paragraph (3) of this subsection must be secured against displacement.

***LP-Gas Safety Rules, §9.140(h)***

### **Uniform Safety Requirements**

In addition, to NFPA 58, §6.24.4.2, each LP-gas private or public motor/mobile or forklift refueling installation which includes a liquid dispensing system shall incorporate into that dispensing system a breakaway device. Any vapor return hose installed at such installations shall also be equipped with a breakaway device. LP-gas installations at which forklift cylinders are completely removed from the forklift before filled are not required to have a breakaway device.

***LP-Gas Safety Rules, §9.141(b)***

**Registration of LP-Gas Transports or Container Delivery Units**

A person who operates a transport equipped with LP-gas cargo tanks or any container delivery unit, regardless of who owns the transport or unit, shall register such transport or unit with AFS in the name or names under which the operator conducts business in Texas prior to the unit being used in LP-gas service.

*LP-Gas Safety Rules, §9.202(a)*

When all registration or transfer requirements have been met, AFS shall issue LPG Form 4 which shall be properly affixed in accordance with the placement instructions on the form. LPG Form 4 shall authorize the licensee or ultimate consumer to whom it has been issued and no other person to operate such unit in the transportation of LP-gas and to fill the transport containers.

*LP-Gas Safety Rules, §9.202(c)*

A person shall not operate an LP-gas transport unit or container delivery unit in Texas unless the LPG Form 4 has been properly affixed or unless its operation has been specifically approved by AFS.

A person shall not introduce LP-gas into a transport container unless that unit bears an LPG Form 4 or unless specifically approved by AFS.

*LP-Gas Safety Rules, §9.202(c)(1) - (2)*

**NFPA Sections Adopted With Changes**

Warning labels must be applied to all cylinders of 4.2 lb to 100 lb propane capacity and not filled on site. Warning labels must include information on the potential hazards of LP-gas.

***LP-Gas Safety Rules, §9.403(a); NFPA 58 §5.2.8.4***

Cylinders with 4.2 lb through 40 lb propane capacity for vapor service must be equipped or fitted with a listed overfilling prevention device and a fixed maximum liquid level gauge.

***LP-Gas Safety Rules, §9.403(a); NFPA 58 §5.7.3.1***

Overfill prevention devices shall be required on cylinders having 4.2 lb through 40-lb propane capacity for vapor service.

***LP-Gas Safety Rules, §9.403(a); NFPA 58 §5.7.4.1(G)***

Cylinders must be installed only aboveground, and must be set upon a firm foundation of concrete, masonry, or metal and be firmly secured against displacement. The cylinder must not be in contact with the soil.

***LP-Gas Safety Rules, §9.403(a); NFPA 58 §6.6.2.1***

A listed quick-acting shutoff valve or a listed quarter-turn ball valve with a locking handle must be installed at the discharge end of the transfer hose.

***LP-Gas Safety Rules, §9.403; NFPA 58 6.24.3.13***

**Sample Question**

A warning label must be affixed to all cylinders of \_\_\_\_ lb. to \_\_\_\_ lb. LP-gas capacity that are not filled on site.

- A. 4.2 lb. / 40 lb.
- B. 1 lb. / 100 lb.
- C. 4.2 lb. / 100 lb.
- D. 40 lb. / 100 lb.

***Answer: C***

## Qualification of Personnel

Persons who transfer liquid LP-Gas, who are employed to transport LP-Gas, or whose primary duties fall within the scope of this code shall be trained in proper handling procedures. Refresher training shall be provided at least every 3 years. The training shall be documented.

***NFPA 58, §4.4***

## Containers

Containers must be designed, fabricated, tested, and marked (or stamped) in accordance with the regulations of the U.S. Department of Transportation (DOT); the ASME Boiler and Pressure Vessel Code, Section VIII; or the API- ASME Code for Unfired Pressure Vessels for Petroleum Liquids and Gases.

(B) Containers fabricated to Interstate Commerce Commission (ICC) Rules for Construction of Unfired Pressure Vessels, prior to April 1, 1967, shall be permitted to be continued to be used in accordance with section 1.4.

***NFPA 58, §5.2.1.1***

Containers that have been involved in a fire and show no distortion must be re-qualified for continued service before being used or reinstalled.

(A) Cylinders must be re-qualified by a manufacturer of the type of cylinder to be re-qualified or by a repair facility approved by DOT.

(B) ASME or API-ASME containers must be retested using the hydrostatic test procedure applicable at the time of the original fabrication.

(C) All container appurtenances must be replaced.

(D) DOT 4E specification (aluminum) cylinders and composite cylinders involved in a fire must be permanently removed from service.

***NFPA 58, §5.2.1.2***

Containers that show excessive denting, bulging, gouging, or corrosion shall be removed from service.

***NFPA 58, §5.2.1.4***

Containers in dispensing stations not located in LP-Gas bulk plants, industrial plants, or industrial applications shall have an aggregate water capacity not greater than 30,000 gal.

***NFPA 58, §5.2.1.8***

A cylinder with an expired qualification date must not be refilled until re-qualified by methods prescribed in DOT regulations.

***NFPA 58, §5.2.2.2***

The service pressure of cylinders must be in accordance with the applicable regulations of 49 *Code of Federal Regulations*, "Transportation."

***NFPA 58, §5.2.4.1***

Cylinders must be designed and constructed for at least a 240 psig service pressure.  
**NFPA 58, §5.2.4.5**

Cylinders of 1,000 lb. water capacity, 420 lb. propane capacity or less must incorporate protection against physical damage to cylinder appurtenances and immediate connections to such appurtenances when not in use by means of a ventilated cap or a ventilated collar.  
**NFPA 58, §5.2.6.1**

When being transported, cylinders must be marked and labeled in accordance with 49 *Code of Federal Regulations*, "Transportation."  
**NFPA 58, §5.2.8.1(B)**

Cylinders must be marked with the following information:  
(1) The water capacity of the cylinder in pounds, and  
(2) The tare weight of the cylinder in pounds, fitted for service.  
**NFPA 58, §5.2.8.2**

Warning labels shall be applied to all cylinders of 100 lb propane capacity or less that are not filled on site.  
**NFPA 58, §5.2.8.4(I)**

All cylinders used in industrial truck service (including forklift truck cylinders) must have the cylinder's pressure relief valve replaced by a new or unused valve within 12 years of the date of manufacture of the cylinders and every 10 years thereafter.  
**NFPA 58, §5.7.2.13**

### Sample Question

DOT 4E aluminum cylinders and composite cylinders involved in a fire must be re-qualified and the cylinder valve replaced before being returned to service.

- A. True
- B. False

**Answer: B**

## Overfilling Prevention Devices

Cylinders with 4.2 lb through 40 lb propane capacity for vapor service must be equipped or fitted with a listed overfilling prevention device and a fixed maximum liquid level gauge.

*LP-Gas Safety Rules, §9.403(a); NFPA 58 §5.7.3.1*

No cylinder shall be filled unless it is equipped with an overfilling prevention device and a fixed maximum liquid level gauge.

*NFPA 58, §5.7.3.3*

The following types of cylinders shall be exempt from the requirements for installing a listed overfilling prevention device:

(1) Cylinders used in industrial truck service and cylinders identified and used for industrial welding and cutting gasses

(2) Cylinders manufactured prior to October 1, 1998, and designed for use in the horizontal position and where an overfilling prevention device is not available.

*NFPA 58, §5.7.3.5*

Exempted horizontal cylinders shall be marked with a label to indicate that they are not equipped with an overfilling prevention device.

*NFPA 58, §5.7.3.6*

An overfilling prevention device shall not be required for engine fuel cylinders used on industrial and forklift trucks powered by LP-Gas or for engine fuel cylinders used on vehicles having LP-Gas powered engines mounted on them.

*NFPA 58, §5.7.4.1(E)*

## Hoses

Hose, hose connections, and flexible connectors shall be fabricated of materials that are resistant to the action of LP-Gas both as liquid and vapor.

*NFPA 58, §5.9.6.1*

When wire braid is used for reinforcement, it shall be of corrosion-resistant material such as stainless steel.

*NFPA 58, §5.9.6.2*

Hose shall be designed for a working pressure of 350 psig with a safety factor of 5 to 1 and shall be continuously marked with LP-GAS, PROPANE, 350 PSI WORKING PRESSURE, and with the manufacturer's name or trademark.

*NFPA 58, §5.9.6.4*

## Hydrostatic Relief Valves

Hydrostatic relief valves designed to relieve the hydrostatic pressure that can develop in sections of liquid piping between closed shutoff valves shall have pressure settings not less than 400 psig or more than 500 psig unless installed in systems designed to operate above 350 psig..

*NFPA 58, §5.13.1*

A hydrostatic relief valve or a device providing pressure-relieving protection shall be installed in each section of piping and hose in which liquid LP-Gas can be isolated between shutoff valves so as to relieve the pressure that could develop from the trapped liquid to a safe atmosphere or product-retaining section.

*NFPA 58, §6.13*

## Installation of Containers

Cylinders installed alongside of buildings must be positioned so the discharge from the pressure relief device is located:

- (1) At least 3 feet horizontally away from any building opening that is below the level of discharge
- (2) At least 5 feet in any direction away from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes.

*NFPA 58 §6.3.7*

Loose or piled combustible material and weeds and long dry grass shall be separated from containers by a minimum of 10 ft.

*NFPA 58, §6.4.5.2*

An aboveground LP-gas container and any of its parts must not be located within 6 feet of a vertical plane beneath overhead electric power lines that are over 600 volts, nominal.

*NFPA 58, §6.4.5.12*

## ASME Engine Fuel/Mobile Fuel Containers on Vehicles

ASME LP-gas engine fuel and mobile containers must be designed to provide at least the following maximum allowable working pressure:

- (1) 250 psig or 312 psig where required if constructed prior to April 1, 2001
- (2) 312 psig if constructed on or after April 1, 2001.

*NFPA 58, §6.23.3.1(A)*

Cylinders installed on recreational vehicles or on other vehicles shall be constructed for at least a 240 psig service pressure.

*NFPA 58, §6.23.3.1(B)*

LP-gas fuel containers used on passenger-carrying vehicles must not exceed 200 gallons aggregate water capacity.

*NFPA 58, §6.23.3.1(D)*

## Vehicle Fuel Dispenser and Dispensing Stations

Where a vehicle fuel dispenser is installed under a weather shelter or canopy, the area must be ventilated and must not be enclosed for more than 50 percent of its perimeter.

**NFPA 58, §6.24.3.3**

An identified and accessible remote emergency shutoff device for either the internal valve or the emergency shutoff valve shall be installed not less than 3 ft or more than 100 ft from the liquid transfer point.

**NFPA 58, §6.24.3.9**

A listed quick-acting shutoff valve shall be installed at the discharge end of the transfer hose.

**NFPA 58, §6.24.3.13**

An identified and accessible switch or circuit breaker shall be installed at a location not less than 20 ft or more than 100 ft from the dispensing device(s) to shut off the power in the event of a fire, accident, or other emergency.

**NFPA 58, §6.24.3.14**

The transfer hose on an LP-gas vehicle fuel dispenser may not be longer than 18 feet unless approved by the authority having jurisdiction.

**NFPA 58, §6.24.4.1(1)**

A listed emergency breakaway device complying with UL 567, *Standard Pipe Connectors for Flammable and Combustible Liquids and LP-Gas*, and designed to retain liquid on both sides of the breakaway point, or other devices affording equivalent protection approved by the authority having jurisdiction, shall be installed.

**NFPA 58, §6.24.4.2**

## Fire Protection

Dispenser locations must have at least one portable fire extinguisher having a minimum capacity of 18 lb. dry chemical with a B:C rating.

**NFPA 58, §6.25.4.2**

LP-gas fires must not be extinguished until the source of the burning gas has been shut off.

**NFPA 58, §6.25.4.3**

## Operational Safety

Transfer operations shall be conducted by qualified personnel meeting the provisions of Section 4.4.

**NFPA 58, §7.2.1.1**

At least one qualified person must remain in attendance at the transfer operation from the time connections are made until the transfer is completed, shutoff valves are closed, and lines are disconnected.

**NFPA 58, §7.2.1.2**

Transfer of LP-gas to and from a container must be accomplished only by qualified individuals trained in proper handling and operating procedures.

**NFPA 58, §7.2.2.1**

Public access to areas where LP-gas is stored and transferred must be prohibited except where necessary for the conduct of normal business activities.

**NFPA 58, §7.2.3.1**

Sources of ignition must be turned off during transfer operations, while connections or disconnections are made, or while LP-gas is being vented to the atmosphere.

**NFPA 58, §7.2.3.2**

Smoking, open flame, portable electrical tools, and extension lights capable of igniting LP-gas must not be permitted within 25 feet of a point of transfer while filling operations are in progress.

**NFPA 58, §7.2.3.2(B)**

These hose assemblies shall be inspected at least annually.

**NFPA 58, §7.2.4.2**

Inspection of pressurized hose assemblies shall include the following:

- (1) Damage to outer cover that exposes reinforcement
- (2) Kinked or flattened hose
- (3) Soft spots or bulges in hose
- (4) Couplings that have slipped on the hose, are damaged, have missing parts, or have loose bolts
- (5) Leakage other than permeability leakage

**NFPA 58, §7.2.4.3**

Leaking of damaged hose shall be immediately repaired or removed from service.

**NFPA 58, §7.2.4.5**

An overfilling prevention device shall not be the primary means to determine when a cylinder is filled to the maximum allowable filling limit.

**NFPA 58, §7.4.4.1**

### Sample Question

Open flames capable of igniting LP-gas must not be permitted within \_\_\_\_\_ feet of a point of transfer while filling operations are in progress.

- A. 50
- B. 25
- C. 15
- D. 10

**Answer: B**

## **Storage of Cylinders**

Cylinders in storage shall be located to minimize exposure to excessive temperature rises, physical damage, or tampering.

***NFPA 58, §8.2.1.1***

If empty cylinders that have been in LP-Gas service are stored indoors, they shall be considered as full cylinders for the purposes of determining the maximum quantities of LP-Gas permitted by 8.3.1, 8.3.2.1, and 8.3.3.1.

***NFPA 58, §8.2.1.4***

Screw-on-type caps or collars shall be in place on all cylinders stored, regardless of whether they are full, partially full, or empty, and cylinder outlet valves shall be closed.

***NFPA 58, §8.2.2.2***

Valve outlets on cylinders less than 108 lb water capacity (nominal 45 lb propane capacity) shall be plugged, capped, or sealed.

***NFPA 58, §8.2.2.3***

## **Storage Outside of Buildings**

Storage outside of buildings for cylinders awaiting use, resale, or part of a cylinder exchange point shall be located as follows:

- (1) At least 5 ft from any doorway or opening in a building frequented by the public where occupants have at least two means of egress as defined by *NFPA 101, Life Safety Code*
- (2) At least 10 ft from any doorway or opening in a building or sections of a building that has only one means of egress.

***NFPA 58, §8.4.1.1***

Cylinders at a location open to the public shall be protected by either of the following:

- (1) An enclosure in accordance with 6.18.4.2
- (2) A lockable ventilated enclosure of metal exterior construction

***NFPA 58, §8.4.2.1***

**Transportation of Portable Cylinders**

Closed-bodied vehicles such as passenger cars, vans, and station wagons must not be used for transporting more than 215 lb. water capacity [90 lb. propane capacity] but not more than 108 lb. water capacity [45 lb. propane capacity] per cylinder, unless the driver and engine compartments are separated from the cargo space by a vapor-tight partition that contains no means of access to the cargo space.

***NFPA 58, §9.3.2.5(B)***

Cylinders and their appurtenances must be determined to be leak-free before being loaded into vehicles.

***NFPA 58, §9.3.2.6***

Cylinders must be fastened in position to minimize the possibility of movement, tipping, and physical damage. ***NFPA 58, §9.3.2.8***

A cylinder with a propane capacity of 45 lbs or less being transported in an open vehicle may be in either position. A cylinder with a propane capacity greater than 45 lbs being transported in an open vehicle must be positioned so the relief valve communicates with the vapor space of the cylinder.

***NFPA 58, §9.3.2.9***

Vehicles transporting cylinders where the total weight is more than 1000 lb including the weight of the LP-Gas and the cylinders, shall be placarded as required by DOT regulations or state law.

***NFPA 58, §9.3.2.10***

## Engine Fuel Systems

Containers shall be designed, fabricated, tested, and marked (or stamped) in accordance with the regulations of the U.S. Department of Transportation (DOT); the ASME *Boiler and Pressure Vessel Code*, Section VIII, “Rules for the Construction of Unfired Pressure Vessels”; or the API-ASME *Code for Unfired Pressure Vessels for Petroleum Liquids and Gases*, except for UG-125 through UG-136.

**NFPA 58, §11.3.1.1**

Containers that have been involved in a fire and show no distortion shall be re-qualified in accordance with CGA C-6 or C-6.3 for continued service before being used or reinstalled.

**NFPA 58, §11.3.1.4**

DOT 4E specification (aluminum) cylinders or composite cylinders involved in a fire shall be permanently removed from service.

**NFPA 58, §11.3.1.4(D)**

Cylinders shall be designed and constructed for at least a 240 psig service pressure.

**NFPA 58, §11.3.1.6**

ASME engine fuel and mobile containers shall be designed to provide at least the following maximum allowable working pressure:

(1) 250 psig or 312 psig if constructed prior to April 1, 2001.

(2) 312 psig if constructed on or after April 1, 2001.

**NFPA 58, §11.3.2.1**

ASME containers fabricated after January 1, 1984 for use as engine fuel containers on vehicles shall be equipped or fitted with an overfilling prevention device.

**NFPA 58, §11.4.1.13**

Where an overfilling prevention device is installed on an engine fuel container, venting of gas through a fixed maximum liquid level gauge during normal filling shall not be required.

**NFPA 58, §11.4.1.15**

## Installation of Containers

After an LP-gas motor/mobile fuel container is permanently installed on a vehicle, the container markings must be readable either directly or with a portable lamp and mirror.

**NFPA 58, §11.7.1.4**

Container valves, appurtenances, and connections must be protected by one of the following:

(1) By locating the container so that parts of the vehicle furnish the necessary protection

(2) By the use of a fitting guard furnished by the manufacturer of the container

(3) By other means to provide equivalent protection.

**NFPA 58, §11.7.2.2**

Containers must not be mounted directly on roofs or ahead of the front axle or beyond the rear bumper of the vehicles.

**NFPA 58, §11.7.3.1**

Main shutoff valves on a container for liquid and vapor must be readily accessible without the use of tools, or other equipment must be provided to shut off the container valves.

*NFPA 58, §11.7.4.3*

The pressure relief valve discharge from containers on vehicles must not directly impinge upon the container, the exhaust system or any part of the vehicle.

*NFPA 58, §11.7.5.1(2)*

The container and its appurtenances shall be installed in an enclosure that is securely mounted to the vehicle.

(A) The enclosure shall be gastight with respect to driver or passenger compartments and to any space containing radio transmitters or other spark-producing equipment.

(B) The enclosure shall be vented to the outside of the vehicle.

*NFPA 58, §11.8.1.2*

To prevent gas from leaking inside a vehicle, a permanently installed remote-fill device and a fixed maximum liquid level gauging device must be installed on the outside of the vehicle.

*NFPA 58, §11.8.1.4*

Each over-the-road general-purpose vehicle powered by LP-gas must be identified with a weather-resistant diamond-shaped label located on an exterior vertical or near vertical surface on the lower right rear of the vehicle (on the trunk lid of a vehicle so equipped, but not on the bumper of any vehicle) inboard from any other markings.

*NFPA 58, §11.11.1*

## **Industrial Truck Cylinders**

The fixed maximum liquid level gauge on an industrial truck cylinder must indicate the maximum permitted filling level in either the vertical or horizontal position.

*NFPA 58, §11.12.2.3*

The cylinder pressure relief valve discharge shall be directed upward within 45 degrees of vertical and otherwise shall not impinge on the cylinder, the exhaust system, or any other part of the industrial truck.

*NFPA 58, §11.12.2.6*

The discharge opening shall be provided with a protective cover to minimize the possibility of the entry of water or any extraneous material.

*NFPA 58, §11.12.2.7*

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## **LP-GAS SAFETY RULES - GENERAL REQUIREMENTS**

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### **Records and enforcement**

An LP-gas licensee or registrant must retain records of pressure tests and leakage tests for at least five years. An LP-gas licensee or registrant must retain a copy of all customer records for at least five years.

During normal business hours, an authorized representative of the Commission may, at any reasonable time, inspect the files, records, reports, documents, equipment, transports, and facilities of an LP-gas licensee for the purpose of verifying compliance with this chapter.

*LP-Gas Safety Rules, §9.4(a) and (c)*

### **Application for License and License Renewal**

No person, except for a trainee described in §9.12, may perform work, directly supervise LP-gas activities, or be employed in any capacity requiring contact with LP-Gas until he or she has passed an applicable rules examination.

*LP-Gas Safety Rules, §9.7(a)*

A state agency or institution, county, municipality, school district, or other governmental subdivision is exempt from licensing requirements if the entity is performing work for itself on its own behalf, but is required to be licensed to perform work for or on behalf of a second party.

*LP-Gas Safety Rules, §9.7(c)*

Licensees, company representatives, and operations supervisors at each outlet shall have copies of all current licenses and certification cards for employees at that location available for inspection during regular business hours.

In addition, licensees shall maintain a current version of the LP-Gas Safety Rules and shall provide at least one copy to each company representative and operations supervisor. The copies shall be available to employees during business hours.

*LP-Gas Safety Rules, §9.7(d)*

LP-gas licenses expire one year after issuance at midnight on the last day of the month prior to the month in which they are issued.

*LP-Gas Safety Rules, §9.7(e)*

If a person's license expires, that person must immediately cease performance of any LP-gas activities authorized by the license.

*LP-Gas Safety Rules, §9.7(h)*

## **Application for a New Certificate**

An applicant for a new certificate must:

File a properly completed LPG Form 16 and the applicable nonrefundable rules examination fee; and Pass the applicable rules examination with a score of at least 75%.

*LP-Gas Safety Rules, §9.8(a)(1) and (2)*

An individual who holds an employee-level certificate who wishes to obtain a management-level certificate must comply with the requirements of the LP-Gas Safety Rules.

*LP-Gas Safety Rules, §9.8(b)*

## **Certificate Renewal**

In order to maintain active status, certificate holders shall comply with the applicable continuing education requirements in this section.

*LP-Gas Safety Rules, §9.9(a)*

Certificate holders must remit the nonrefundable \$35 annual certificate renewal fee to AFS on or before May 31 of each year. Individuals who hold more than one certificate must pay only one annual renewal fee.

*LP-Gas Safety Rules, §9.9(c)*

Failure to pay the nonrefundable annual renewal fee by the deadline will result in a lapsed certification.

To renew a lapsed certification, the individual must pay the nonrefundable \$35 annual renewal fee plus a nonrefundable \$20 late-filing fee.

If an individual's certification expires, he or she must immediately cease performance of any LP-gas activities authorized by the certification.

If an individual's certificate has been expired for more than two years from May 31 of the year in which certification lapsed, that individual must comply with the requirements for a new certificate.

*LP-Gas Safety Rules, §9.9(c)(1)*

Continuing education. Certificate holders shall successfully complete the continuing education requirements as specified in §§9.51 and 9.52 of this title (relating to General Requirements for Training and Continuing Education, and Training and Continuing Education Courses).

*LP-Gas Safety Rules, §9.9(d)*

Failure to comply with the continuing education requirements by the assigned deadline shall result in a lapsed certification.

*LP-Gas Safety Rules, §9.9(d)(1)*

If a certification lapses as specified in paragraph (1) of this subsection, the individual shall pay the \$20 late fee.

*LP-Gas Safety Rules, §9.9(d)(2)*

## Rules Examination

An individual who files LPG Form 16 and pays the applicable nonrefundable examination fee may take the rules examination at the Commission's AFS Training Center, 6506 Bolm Road, Austin, Texas, between the hours of 8:00 a.m. and 12:00 noon, Monday through Friday, except for state holidays, and at other designated times and locations around the state.

*LP-Gas Safety Rules, §9.10(a)*

Failure of any LP-gas qualifying examination immediately disqualifies the examinee from performing any LP-gas-related activities covered by the failed examination, except activities that are covered by a separate examination the individual has passed.

*LP-Gas Safety Rules, §9.10(d)*

## Trainees

A licensee may employ an individual as a trainee for a period not to exceed 45 calendar days without that individual having successfully completed the rules examination.

A trainee must be directly and individually supervised at all times by an individual who has successfully completed the Commission's rules examination for the areas of work being performed by the trainee.

*LP-Gas Safety Rules, §9.12(a)*

### Sample Question

If a person's license \_\_\_\_\_ they must \_\_\_\_\_ performance of any LP-gas activities authorized by the license.

- A. Is not renewed / minimize
- B. Expires / immediately cease
- C. Is suspended / substantially cease
- D. Expires / substantially cease

*Answer: B*

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## Designation and Responsibilities of Company Representatives and Operations Supervisors

Each licensee shall have at least one company representative for the license and, in the case of a licensee other than a Category P licensee, at least one operations supervisor for each outlet.

*LP-Gas Safety Rules, §9.17 (a)*

A licensee maintaining one or more outlets shall file LPG Form 1 with AFS designating the company representative for the license and/or LPG Form 1A designating the operations supervisor for each outlet.

*LP-Gas Safety Rules, §9.17 (a)(1)*

A licensee may have more than one company representative.

*LP-Gas Safety Rules, §9.17 (a)(2)*

An individual may be operations supervisor at more than one outlet provided that:

Each outlet has a designated LP-gas certified employee responsible for the LP-gas activities at that outlet;

The certified employee's and/or operations supervisor's telephone number is posted at the outlet on a sign with lettering at least 3/4-inch high, visible and legible at all times; and

The certified employee and/or the operations supervisor monitors the telephone number and responds to calls during normal business hours.

*LP-Gas Safety Rules, §9.17 (a)(3)(A) – (C)*

The company representative may also serve as operations supervisor for one of the licensee's outlets provided that the individual meets both the company representative and the operations supervisor requirements in this section.

*LP-Gas Safety Rules, §9.17 (a)(4)*

A licensee shall immediately notify AFS in writing upon termination, for whatever reason, of its company representative or any operations supervisor and shall at the same time designate a replacement by submitting a new LPG Form 1 for a new company representative or a new LPG Form 1A for a new operations supervisor.

A licensee shall cease all LP-gas activities if, at the termination of its **company representative**, there is no other qualified company representative of the licensee who has complied with the Commission's requirements. A licensee shall not resume LP-gas activities until such time as it has a properly qualified company representative or it has been granted an extension of time in which to comply as specified in subsection (g) of this section.

A licensee shall cease LP-gas activities at an outlet if, at the termination of its **operations supervisor** for that outlet, there is no other qualified operations supervisor at that outlet who has complied with the Commission's requirements. A licensee shall not resume LP-gas activities at that outlet until such time as it has a properly qualified operations supervisor or it has been granted an extension of time in which to comply as specified in subsection (g) of this section.

*LP-Gas Safety Rules, §9.17 (a)(5)(A) - (B)*

**Company representative**

A company representative shall comply with the following requirements:

- (1) be an owner or employee of the licensed entity, in the case of a licensee other than a Category P licensee;
- (2) be the licensee's principal individual in authority and, in the case of a licensee other than a Category P licensee, responsible for actively supervising all LP-gas activities conducted by the licensee, including all appliance, container, portable cylinder, product, and system activities;
- (3) have a working knowledge of the licensee's LP-gas activities to insure compliance with the LP-Gas Safety Rules;
- (4) pass the appropriate management-level rules examination and complete any required training specified in §9.52 of this title (relating to Training and Continuing Education Courses),
- (5) comply with the work experience or training requirements in subsection (g) of this section, if applicable;
- (6) be directly responsible for all employees performing their assigned LP-gas activities, unless an operations supervisor is fulfilling this requirement; and
- (7) submit any additional information as deemed necessary by AFS.

*LP-Gas Safety Rules, §9.17 (b)(1) - (7)*

**Operations supervisors**

An operations supervisor, in the case of a licensee other than a Category P licensee, shall comply with the following requirements:

- (1) be an owner or employee of the licensee;
- (2) pass the applicable management-level rules examination and complete any required training specified in §9.52 of this title (relating to Training and Continuing Education Courses) and
- (3) be directly responsible for actively supervising the LP-gas activities of the licensee at the designated outlet.

*LP-Gas Safety Rules, §9.17 (c)(1) - (3)*

### **Written Procedure for LP-Gas Leaks**

Each licensee must maintain a written procedure to be followed when any employee receives notification of a possible leak. The written procedures must include the classification of the leak grade.

*LP-Gas Safety Rules, §9.35(a) and (b)*

An example of a Grade 1 LP-gas leak is any leak that can be seen, heard or felt, any leak that is in a location that may endanger the general public or property or any indication of gas which has migrated into or under a building

*LP-Gas Safety Rules, §9.35(c)*

### **Reporting an Accident**

At the earliest practical moment or within two hours following discovery, a licensee owning, operating, or servicing the equipment of an installation shall notify AFS by telephone of any event involving LP-gas which:

- (1) caused a death or any personal injury requiring hospitalization; or
- (2) required taking an operating facility out of service; or
- (3) resulted in unintentional gas ignition requiring an emergency response; or
- (4) involved the LP-gas installation on any vehicle propelled by or transporting LP-gas; or
- (5) caused an estimated damage to the property of the operator, others or both totaling \$5,000 or more including gas loss; or
- (6) could reasonably be judged as significant because of rerouting of traffic, evacuation of buildings, or media interest even though it does not meet paragraphs (1) - (5) of the subsection; or
- (7) is required to be reported to any other state or federal agency (such as the Texas Department of Public Safety or the United States Department of Transportation).

*LP-Gas Safety Rules, §9.36(a)*

## **Training and Continuing Education Courses**

### **Training**

Category F, G, I, and J management-level applicants shall attend the 16-hour class and all applicants for employee-level certifications that are subject to training requirements shall attend an eight-hour class.

*LP-Gas Safety Rules, §9.52 (a)*

Individuals who pass an employee level rules examination between March 1 and May 31 of any year shall have until May 31 of the next year to complete any required training. Individuals who pass an employee level rules examination at other times shall have until the next May 31 to complete any required training. Completion of AFT shall be in accordance with subsection (g) of this section.

*LP-Gas Safety Rules, §9.52 (a)(1)*

Applicants for company representative or operations supervisor shall comply with the training requirements in this section prior to the Commission issuing a certificate.

*LP-Gas Safety Rules, §9.52 (a)(2)*

### **Continuing Education**

A certificate holder shall complete at least eight hours of continuing education every four years. Upon fulfillment of this requirement, the certificate holder's next continuing education deadline shall be four years after the May 31 following the date of the most recent class the certificate holder has completed, unless the class was completed on May 31, in which case the deadline shall be four years from that date.

A certificate holder's continuing education deadline shall not be extended if an examination for a current category and level of certification is retaken and passed; a continuing education deadline shall be extended only after a certificate holder successfully completes an applicable continuing education class. An individual who completes a continuing education class after the assigned deadline shall have four years from the original deadline to complete the next class.

*LP-Gas Safety Rules, §9.52 (b)*

### **Advanced Field Training (AFT)**

Some classes may include AFT in addition to the classroom hours, during which class attendees shall perform LP-gas activities. AFT shall be properly completed within 30 calendar days of attending the class. All qualification tasks included in the AFT shall be completed. The AFT materials, including the qualification checklist and the certification page, shall be readily available at the licensee's Texas business location for review by an authorized Commission representative during normal business hours.

*LP-Gas Safety Rules, §9.52 (g)*

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## **Additional Requirements For Category J**

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### **Transportation of Portable Cylinders**

Section 9.3 shall apply to the vehicular transportation of portable containers filled with LP-Gas delivered as “packages,” including containers built to DOT cylinder specifications and other portable containers.

#### ***NFPA 58, §9.3.1***

The cargo space of the vehicle shall be isolated from the driver’s compartment, the engine, and its exhaust system. Open-bodied vehicles shall be considered to be in compliance with this provision.

(A) Closed-bodied vehicles having separate cargo, driver, and engine compartments shall also be considered to be in compliance with this provision.

(B) Closed-bodied vehicles such as passenger cars, vans, and station wagons must not be used for transporting more than 215 lb water capacity [90 lb propane capacity] but not more than 108 lb water capacity [45 lb propane capacity] per cylinder, unless the driver and engine compartments are separated from the cargo space by a vapor-tight partition that contains no means of access to the cargo space.

#### ***NFPA 58, §9.3.2.5***

Cylinders and their appurtenances must be determined to be leak-free before being loaded into vehicles.

#### ***NFPA 58, §9.3.2.6***

Cylinders shall be loaded into vehicles with flat floors or equipped with racks for holding cylinders.

#### ***NFPA 58, §9.3.2.7***

Cylinders must be fastened in position to minimize the possibility of movement, tipping, and physical damage.

#### ***NFPA 58, §9.3.2.8***

A cylinder with a propane capacity of 45 lb or less being transported in an open vehicle may be in either position. A cylinder with a propane capacity greater than 45 lb being transported in an open vehicle must be positioned so the relief valve communicates with the vapor space of the cylinder.

#### ***NFPA 58, §9.3.2.9***

Vehicles transporting cylinders where the total weight is more than 1000 lb including the weight of the LP-Gas and the cylinders, shall be placarded as required by DOT regulations or state law.

#### ***NFPA 58, §9.3.2.10***

Vehicles used to carry portable containers shall not be moved into any public garage or building for parking until all portable containers have been removed from the vehicle.

#### ***NFPA 58, §9.7.3.2***

## Installation of Cylinders and Regulators

LP-gas piping shall be installed only by a licensee authorized to perform such installation, a registrant authorized by §9.13 of this title (relating to General Installers and Repairman Exemption), or an individual exempted from licensing as authorized by Texas Natural Resources Code, §113.081

A licensee shall not connect an LP-gas container or cylinder to a piping installation made by a person who is not licensed to make such installation, except that connection may be made to piping installed by an individual on that individual's single family residential home.

A licensee may connect to piping installed by an unlicensed person provided the licensee has performed a pressure test, verified that the piping has been installed according to the LP-Gas Safety Rules, and filed a properly-completed LPG Form 22 with LP-Gas Operations, identifying the unlicensed person who installed the LP-gas piping.

***LP-Gas Safety Rules, §9.134***

Cylinders shall be installed only aboveground and shall be set upon a firm foundation of concrete, masonry, or metal and ~~or be otherwise~~ be firmly secured against displacement. The cylinder shall not be in contact with the soil.

***NFPA 58, §6.6.2.1*** With changes per ***LP-Gas Safety Rules, §9.403 (a)***

Flexibility shall be provided in the connecting piping. Where flexible connectors are used, they shall comply with 6.9.6.

***NFPA 58, §6.6.2.2***

Regulators shall be directly attached, or shall be permitted to be attached by flexible hose connector or flexible metallic connector, to portable-type cylinders that are installed and replaced on a cylinder exchange basis.

***NFPA 58, §6.8.1.2***

All regulators for outdoor installations shall be designed, installed, or protected so their operation will not be affected by the elements (freezing rain, sleet, snow, ice, mud, or debris).

**(A)** This protection shall be permitted to be integral with the regulator.

***NFPA 58, §6.8.1.5***

The point of discharge from the required pressure relief device on regulated equipment installed outside of buildings or occupiable structures in fixed piping systems shall be located not less than 3 ft. horizontally away from any building or occupiable structure opening below the level of discharge, and not beneath or inside any building or occupiable structure unless this space is not enclosed for more than 50 percent of its perimeter.

***NFPA 58, §6.8.1.6***

The point of discharge shall also be located not less than 5 ft. in any direction away from any source of ignition, openings into direct-vent (sealed combustion system) appliances, or mechanical ventilation air intakes.

***NFPA 58, §6.8.1.7***

A two-stage regulator system, an integral two-stage regulator, or a 2-psi regulator system shall be required on all fixed piping systems that serve ½ psig appliance systems [normally operated at 11 in. water capacity pressure].

(A) The requirement for two-stage regulation shall include fixed piping systems for appliances on RVs (recreational vehicles), mobile home installations, manufactured home installations, catering vehicles, and food service vehicle installations.

(B) Single-stage regulators shall not be installed in fixed piping systems on or after February 1, 2001, except for installations covered in 6.8.2(C). Single-stage regulators in good working order installed prior to February 1, 2001, may remain in service.

**NFPA 58, §6.8.2** With changes per *LP-Gas Safety Rules, §9.403 (a)*

Second-stage regulators and integral two-stage regulators shall have a maximum outlet pressure setting of 14 in. w.c. and shall be equipped with one of the following:

(1) An integral pressure relief valve on the outlet pressure side having a start-to-discharge pressure setting within the limits specified in UL144, *Standard for LP-Gas Regulators*. This relief device shall limit the outlet pressure of the second-stage regulator to 2.0 psig when the regulator seat disc is removed and the inlet pressure to the regulator is 10.0 psig or less, as specified in UL 144.

**NFPA 58, §5.8.1.2**

## Pressure Testing and Inspection

Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code.

### ***NFPA 54, §8.1.1.1***

Inspection shall consist of visual examination, during or after manufacture, fabrication, assembly, or pressure tests as appropriate.

### ***NFPA 54, §8.1.1.2***

The test medium shall be air, nitrogen, carbon dioxide, or an inert gas.

OXYGEN SHALL NEVER BE USED.

### ***NFPA 54, §8.1.2***

Test pressure shall be measured with a manometer or with a pressure measuring device designed and calibrated to read, record, or indicate a pressure loss due to leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than 5 times the test pressure. end of the scale is not greater than 5 times the test pressure.

### ***NFPA 54, §8.1.4.1***

The test pressure to be used shall be no less than 1½ times the proposed maximum working pressure, but not less than 3 psi (20 kPa), irrespective of design pressure.

### ***NFPA 54, §8.1.4.2***

Test duration shall be not less than 1/2 hour for each 500 ft<sup>3</sup> of pipe volume or fraction thereof. When testing a system having a volume less than 10 ft<sup>3</sup> or a system in a single-family dwelling, the test duration shall be a minimum of 10 minutes. The duration of the test shall not be required to exceed 24 hours.

### ***NFPA 54, §8.1.4.3***

The leakage shall be located by means of an approved gas detector, a noncorrosive leak detection fluid, or other approved leak detection methods. Matches, candles, open flames, or other methods that provide a source of ignition shall not be used.

### ***NFPA 54, §8.1.5.2***

Leak checks using fuel gas shall be permitted in piping systems that have been pressure tested in accordance with Section 8.1.

### ***NFPA 54, §8.2.1***

Before gas is introduced into a system of new gas piping, the entire system shall be inspected to determine that there are no open fittings or ends and that all valves at unused outlets are closed and plugged or capped.

### ***NFPA 54, §8.2.2***

Immediately after the gas is turned on into a new system or into a system that has been initially restored after an interruption of service, the piping system shall be checked for leakage. Where leakage is indicated, the gas supply shall be shut off until the necessary repairs have been made.

### ***NFPA 54, §8.2.3***

# RRC ALTERNATIVE FUELS TRAINING CENTER 4044 PROMONTORY POINT DR., AUSTIN

